

KHAMUDKHANOV, Musafar Zakhidkhanovich; FAZYLOV, Kh.P., akademik, otv.red.;
PAVLOVA, M.I., red.izd-va; BARTSEVA, V.P., tekhn.red.

[Frequency control of an asynchronous electric drive by use of an
autonomous inverter] Chastotnoe upravlenie asinkhronnym elektro-
privodom pri pomoshchi avtonomnogo invertora. Tashkent, Izd-vo
Akad.nauk Uzbekskoi SSR, 1959. 334 p. (MIRA 13:5)

1. AN UzSSR (for Fazylov).
(Electric motors, Induction)

SIROMYATNIKOV, I.A.; NEKRASOV, A.M.; LEREDEV, A.A.; KOSTENKO, M.P.;
NEYMAN, L.R.; VASIL'YEV, D.V.; KAMENSKIY, M.D.; USOV, S.V.;
POSSE, A.V.; UL'YANOV, S.A.; FAZYLOV, Kh.P.

Professor N.N. Shchedrin; on his seventieth birthday and fortieth
anniversary of his educational work. Elektrichesvo no.1:94-
95 Ja '62. (MIRA 14:12)

(Shchedrin, Nikolai Nikolaevich, 1891-)

FAZYLOV, Kh. F., akademik

Khabib Mukhamedovich Abdullaev; obituary. Izv. AN Uz.SSSR.
Ser. tekhn. nauk 6 no.5:99 '62. (MIRA 15:10)

1. Sekretar' otdeleniya tekhnicheskikh nauk AN UzSSR.

(Abdullaev, Khabib Mukhamedovich, 1912-1962)

GRINEVICH, G.A.; GARTSMAN, L.B.; RAKHIMOV, Kh.; PETELINA, N.A.;
FAZYLOV, Kh.F., akademik, ovt. red.; SHAFYEVA, K.A.,
red.; SOKOLOVA, A.A., red.; KARABAYEVA, Kh.U., tekhn.
red.

[Study of the characteristics of regenerative power sources;
wind, water, and solar energy] Issledovaniia kharakteristik
rezhima vozobnovliaiushchikhsia istochnikov energii vody,
vatra i solntsa. Tashkent, 1963. 205 p. (MIRA 16:8)

1. Akademiya nauk Uzbekskoy SSR, Tashkent. Institut energetiki
i avtomatiki. 2. AN UzSSR (for Fazylov).
(Power resources)

FAZYLOV, Kh.F., GRINEVICH, G.A., doktor tekhn. nauk, otv. red.;
EYDEL'MAN, A.S., red.

[Methods for mode calculations of electrical systems; for
a unified calculational algorithm] Metody rezhimnykh ras-
chetov elektricheskikh sistem; k edinomu algoritmu rasche-
tov. Tashkent, Nauka, 1964. 96 p. (MIRA 18:2)

L 20010-65 SWT(m) Pe-4 RWH/RM
ACCESSION NR: AP5001896

S/0286/64/000/023/0048/0048

AUTHOR: Lerner, M. M.; Fazylov, Kh. F.; Fal'kovskiy, N. I.

TITLE: Electrolytic capacitor. Class. 21, No. 166783 15

SOURCE: Byulleten' izobretaniy i tovarnykh znakov, no. 23, 1964, 48

TOPIC TAGS: electrolytic capacitor, dielectric insulation

ABSTRACT: An Author Certificate has been issued for an electrolytic capacitor with dielectric insulation in the form of porous oxide film on an aluminum base. For increased operating voltage, the porous oxide film is impregnated with water desalinated by means of an ion-exchange resin. Specific resistance of the water is on the order of 10^5 ohm. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 04Ju163

ENCL: 00

SUB CODE: EG, MT

NO REF SOV: 000

OTHER: 000

ATD PRESS: 3161

Card 1/1

FAZYLOV, Kh. F.

Considering the network factor in economic distribution of the active power of a system among electric stations. Izv. AN Uz.SSR. Ser.tekh.nauk 9 no.5:4-8 '65. (MIRA 18:10)

1. Uzbekskiy nauchno-issledovatel'skiy institut energetiki i avtomatiki.

FAZYL V., N. F.

FAZYL V., N. F. - "The effectiveness of cleaning crude cotton in the technological system of cotton-picking machines during the collection process". Tashkent, 1955. Ministry of Higher Education USSR, Tashkent Textile Inst. (Dissertation for the Degree of Candidate of Technical Sciences)

SO: Knizhnaya Letopis', No. 40, 1 Oct 55

FAZYLOV, N.F., kand.tekhn.nauk

Some causes of injuries to cottonseeds as a results of picking by
machine. Sbor. nauch.-issl. rab. TTI no.4:26-29 '57. (MIRA 11:9)
(Cottonseeds) (Cotton picking)

FAZYLOV, N. F.

Cleaning cotton during machine picking. Izv. AN Uz.SSR. Ser. tekh.
nauk no. 3:44-50 '59.
(MIRA 12:?)

1. Institut mekhaniki AN UzSSR.
(Cotton picking)

FAZYLOV, U.F.

Bracing 6-12M self-supporting wall panels to supporting
structures of buildings. Sber. nauch. trud. NII po strci.
AIIA no.44-48 '63. (MIRA 17:8)

ZAPROMETOV, B.G.; FAZYLOVA, M.F.

Effect of hydrophilic properties of $Fe(OH)_3$ colloidal particles on
structural and mechanical properties of their coagulates. Trudy
SAGU no.27:25-30 '51. (MLRA 9:5)
(Colloids) (Iron Hydroxides)

FAZYLOVA, M. E., Cand of Chem Sci -- (diss) "Reciprocal coagulation of the ashes of Fe(OH)_3 , V_2O_5 , SiO_3 , As_2S_3 , the suspended matter of loess and clay, and the structural-mechanical properties of their coagulants."

Tashkent, 1957, 14 pp (Central Asian State University im Lenin), 150 copies (KL, 33-57, 88)

FAZYLOVA, M.F.; ZAPROMETOV, B.G. [deceased]

Structural and mechanical properties of reciprocal coagulates. Izv.
AN Uz. SSR Ser. khim. nauk no.1;55-65 '57. (MIRA 13:10)
(Coagulation)

MARKMAN, A.L.; FAZYLOVA, M.F.

Polarographic behavior of vanillin. Uzb.khim.zhur. no.4:64-66
'61. (MIRA 14:8)

1. Sredneaziatskiy politekhnicheskiy institut.
(Vanillin) (Polarography)

FAZYLOVA, S.

Effect of carbon dioxide concentration on photosynthesis in some
desert plants of the Kyzyl-Kum. Uzb. biol. zhur. no.4:27-32 '61.
(MIRA 14:10)

1. Institut botaniki AN UzSSR.
(KYZYL-KUM--PHOTOSYNTHESIS)

FAZYLOVA, S.F.

Effect of temperature on photosynthesis in some desert plants.
Uzb. biol. zhur. no.3:22-28 '61. (MIRA 14:6)

1. Institut botaniki AN UzSSR.
(UZBEKISTAN—DESERT FLORA) (PHOTOSYNTESIS)
(PLANTS, EFFECT OF TEMPERATURE ON)

FAZILOVA, S.F.

Photosynthetic capacity of some plants of the southern Kysyl Kum
depending on their stage of development. Uzb. biol. zhur. no. 4:34-
39 '60. (MIRA 13:10)

1. Institut botaniki UzSSR.
(KYZYL KUM—DESERT FLORA) (PHOTOSYNTHESIS)

TOSTI, A.; FAZZINI, M.L.; ZAHEJSKY, J.

Contact microradiography of the skin. Cesk. derm. 39 no.2:
73-77 Ap'64

1. Dermato-venerologicka klinika Palermo; prednosta: prof.dr.
I. Bosco.

*

FEAFILAKTOV, Yu., inzh.

Cooperation of designers and technicians. Izobr.i rats. no.12:19
D '61. (MIRA 14:12)

1. Byuro po delam ratsionalizatsii i izobretatel'stvu,
g.Nizhniy Tagil.
(Nizhniy Tagil--Steelworks)

FEEO, Laszlo, dr.

When is the Faipar Lexikon [Wood Lexicon] to be published?
Faipar 13 no.4:129-130 Ap '63.

FEBRIANC, O.

Vertebrates of the Velky Ostrov Zitny (Great Schutt). I. p. 308

Vol. 10, no. 3, 1955

BIOLOGIA

Bratislava, Czechoslovakia

So: Eastern European Accession Vol. 5, No. 4, April 1956

FECAK, B.; MAJOR, K.; SPACEK, F.

Effect of the binding substance on the quality of amidopyrine tablets.
Cesk. farm. 11 no.7:342-345 S '62.

1. Katedra galenickej farmacie Farmaceutickej fakulty Univerzity
Komenskeho, Bratislava Leciva n.p., provozovna Zizkov, Praha.
(AMINOPYRINE) (TABLETS) (GELATIN) (STARCH)

TECHN, B.

Presidente, LIMA, 1981, Vol. 1, No. 2, 1981.

(U)

1. "The Production, Distribution and Supply of Veterinary Medical Products with Reference to the Veterinary Services of the Ministry of the First, Veterinary Services (Cattle, Swine, Poultry, and Fish) in Peru; PP 5-3-81.
2. "Termination of Agreements in Relation to the Purchase of Agricultural Products, and the Purchase of Agricultural Products by the Ministry of Agriculture and Livestock at the End of the Agricultural Year 1980-1981, and the Purchase of Agricultural Products by the Ministry of Agriculture and Livestock, 1980-1981.
3. "Report on the Food Frequency Survey by the Ministry of Agriculture and Livestock, Ministry of Health, and the Ministry of Education, 1982.
4. "The Meeting of the Executive Committee of the Ministry of Health, Education, and Research, and the Meeting of the Executive Committee of the Ministry of Agriculture and Livestock, Ministry of Education, and the Ministry of Health, 1982.
5. "The Use of Information to Improve the Health Characteristics, Improvement of Health Services, and the Improvement of the Health Services in Peru, and the Improvement of the Health Services in the Health Sector, and the Health Sector Services in the Health Sector.
6. "New Agricultural Infrastructure, constructed by the Agency for Technical Cooperation, 1982.
7. "On the Problem of Present Health Services in Peru, 1982, of the First, Veterinary Services (Cattle, Swine, Poultry, and Fish), 1982.
8. "The Study of Market Supply Distribution with Focus before the Distribution by a Governmental Institution set up to 1982.
9. "New Economic Structure - Structure 20-87 in Economic Institutions, 1982.

— 11 —

FECAK, B.

CSSR

FECAK, B.; GEORCH, D.; VOLDAN, B.

Dept of Galenic Pharmacy and dept. of biochemistry and microbiology of the
Pharmaceutical Faculty of Comenius University, Bratislava (katedra galenickej
farmacie a Katedra biochemie a mikrobiologie Farmaceutickej fakulty UK v
Bratislave), LO-KUNZ, Bratislava (for all)

Bratislava, Farmaceuticky Obzor, No 1, 1963, pp 11-20

"Some Data on the Conservation of Ophthalmological Preparations"

(3)

CZECHOSLOVAKIA

GEORCH, D; FECAK, B; VOLDAN, B.

1. Chair of Galenic Pharmacy of the Pharmaceutical Faculty UK (Katedra galenickej farmacie Farmaceutickej fakulty UK), Bratislava; 2. Chair of Biochemistry and Microbiology of the Pharmaceutical Faculty UK (Katedra biochemie a mikrobiologie Farmaceutickej fakulty UK), Bratislava

Bratislava, Farmaceuticky obzor, No 2, 1963, pp 58-62

"On the Question of the Conservation of Ophthalmological Preparations."

CZECHOSLOVAKIA

GEORCH, D; FECAK, B; VOLDAN, B.

1. Chair of Galenic Pharmacy (Katedra galenickej farmacie), Bratislava; 2. Chair of Biochemistry and Microbiology of the Pharmaceutical Faculty of UK (Katedra biochemie a mikrobiologie Farmaceutickej fakulty UK), Bratislava

Bratislava, Farmaceuticky obzor, No 4, 1963, pp 157-162

"Possibilities of Use of Septonex as a Conservation Means in the Preparation of Collyrium."

FECHER, A.S.; LOZA, V.M.

Effect of ascorbic acid on champagne wines. Izv. vys. ucheb. zav.;
pishch. tekhn. no. 2:24-33 '58. (MIRA 11:10)

1. Krasnodarskiy institut pishchevoy promyshlennosti, Kafedra fizi-
cheskoy i kolloidnoy khimii i Kafedra tekhnologii vinenii.
(Champagne(Wine))
(Ascorbic acid)

FECHETE, A: CAZACU, I

Study related to the influence of phosphorus on the mechanical properties of cast iron containing nodular graphite. p.397

Academia Republicii Populare Romane. Centrul de Cercetari Metalurgice.
STUDII SI CERCETARI DE METALURGIE. Bucuresti, Romania
Vol.3, no.3, 1958

Monthly list of East European Accessions (EEAI) LC, VOL.8, no.8, Aug, 1959

Uncol.

ACC NR: AR6034314

SOURCE CODE: RU/0017/66/000/002/0080/0082

AUTHOR: Fechete, A. (Engineer); Nita, V. (Engineer)

ORG: "Tractorul" Works, Brasov (Uzinele "Tractorul")

TITLE: Molding mixtures and the surface of pig iron parts

SOURCE: Metalurgia, no. 2, 1966, 80-82

TOPIC TAGS: pig iron, metal casting

ABSTRACT: Analyzing the surface defects of pig iron parts produced with the aid of various molding mixtures, the authors find the best finish was given by the use of synthetic molding mixtures with added bentonite and wood flour. Orig. art. has: 1 figure and 3 tables. [Based on authors' Eng. abst.] [JPRS: 36,867]

SUB CODE: 13 / SUBM DATE: none

B

Card 1/1 *al*

UDC: 621.742.4:621.741.2

25(1), 18(5)

AUTHORS:

Cazacu, Iulian, Vădănică, Tiberiu, and Fechete,
Alexandru, Engineers

RUM/9-59-9-6/46

TITLE:

The Correlation Between the Index of Saturation and
the Volume of Contraction Cavity in Grey Cast Iron

PERIODICAL:

Metalurgia și construcția de mașini, 1959, Nr 9,
pp 763-768 (RUM)

ABSTRACT:

The authors begin their paper by giving the general equation of the relative volume of the contraction cavity of Fe-C alloys according to I.A. Nehendzi and N.G. Ghirsovici [Ref 1] (Equation 1):

$$V_{ret} = a_1(t_m - t_L) + s - 1.5 \cdot (t_s - t_S) \cdot 1 - \frac{a_1}{2R}$$

where a_1 is the coefficient of contraction of the liquid metal; t_m the average temperature of the liquid metal at the beginning of solidification; t_L the temperature of the solidification beginning; s the contraction of the metal in the process of solidification; a_1 the coefficient of linear contraction in solid state (the anteperlitic field); t_s the

Card 1/9

FECHETE, A.

Technical and scientific session at the Tractorul Plant in
Brasov. Metalurgia si constr mas 15 no.3:282 Mr '63.

VADANICI, T., ing.; NITA, V., ing.; PECHETE, A., ing.

Methods used for obtaining cast iron with higher physicomechanical characteristics. Metalurgia Rum 17 no.2:88-90 F '65.

1. "Tractorul" Plant, Brasov.

YAKUBOVICH, I.A.; PASKHIN, N.P.; VILYANSKIY, M.P.; BABIN, S.Ye.; SLAVUTSKAYA, N.I.; Prinimali uchastiye: PARADNYA, P.I.; RUPNEVSKAYA, M.I.; PURISMAN, V.I.; LONNOVA, L.F.; PACHKOV, A.S.; BACHURINA, K.M.; FECHIN, M.I.; YUKSINA, L.A.; PONOMAREV, Yu.F.; DYMOVICH, Ye.I.; PIKUSOVA, R.A.

Production and use of synthetic water-soluble polyacrylamide adhesives. Ferm. i spirt.prom. 30 no.8:32-34 '64.

(MIRA 18:1)

1. Moskovskiy likero-vodochnyy zavod.

P/045/60/019/003/002/010
B022/B070

AUTHOR: Fechner, Bogdan

TITLE: On the Statistics of Spin Waves by the Bethe Method

PERIODICAL: Acta Physica Polonica, 1960, Vol. 19, No. 3, pp. 289 - 293

TEXT: The starting point in Bloch's spin wave theory is Heisenberg's model of a ferromagnetic crystal where the interactions between electrons are considered as perturbations. Using the perturbation theory with such a model one gets in first approximation the system of Slater-Bloch's equations. For the simplest case of a linear chain, Bethe has developed a treatment to obtain a rigorous solution. Based on this treatment Frank has discussed the symmetry properties of the amplitudes for interchange of k in Slater-Bloch equations, and has arrived at the conclusion that for spin waves the Fermi-Dirac statistics is more appropriate than the Bose-Einstein. S. V. Svirskiy - B. Kh. Ishmukhametov and S. V. Vonsovskiy - M. S. Svirskiy (Refs. 5,6) call in question this conclusion. They point out that the results of Frank rest on an artificial introduction of additional equations, which requires an extension of the definition of

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✓B

On the Statistics of Spin Waves by the Bethe
Method

P/045/60/019/003/002/010
B022/B070

the amplitude to the case $m_i = m_j$. This problem is examined in the present paper. Following Bethe's method the author has deduced results from the secular equations without introducing any additional equations and without extending the definition of the amplitude, and these results are found to be equivalent to those of Bethe and Frank. Thus the objection mentioned above is shown not to be valid. It is pointed out, however, that the correct results of Frank do not prove the reality of his conclusions. The results obtained by the present author are not single valued; there are two values differing in sign whose choice determines the symmetry of the amplitude for the interchange of k . Thus, the choice of sign cannot be decided without additional assumptions. This point is discussed in section III of the paper. The author expresses his indebtedness to Prof. S. Szczeniowski for continuous interest and encouragement and for reading and discussing the text. Dr. H. Cofta is mentioned. There are 6 references: 2 Soviet, 2 US, and 2 German.

✓B

ASSOCIATION: Institute of Theoretical Physics, A. Mickiewicz University,
Poznań

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89381

P/045/61/020/001/006/006
B108/B209

24.7900 (1147,1158,1160)

AUTHOR: Fechner, Bogdan

TITLE: On the high temperature susceptibility of ferrimagnetics and antiferrimagnetics

PERIODICAL: Acta Physica Polonica, v. 20, no. 1, 1961, 89-91

TEXT: The present paper is a letter to the editor. The author extends the calculations of the zero-field susceptibility, which for ferro- and antiferromagnetism were carried out by W. Opechowski (Physica, 4, 181 (1937)) and others, for the case of ferri- and antiferrimagnetism with arbitrary spin of the magnetic atoms. The author starts with the Hamiltonian in the form

$$\mathcal{H} = -2 \sum_{\langle i,j \rangle} J_{ij} S_i S_j - g\beta H \sum_i S_i^z$$

which relates to an ordered crystal structure composed of two kinds of magnetic atoms. $\langle i,j \rangle$ means that the summation is extended over all

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P/045/61/020/001/006/006
B108/B209

On the high temperature susceptibility...

neighboring lattice sites in which magnetic atoms are present. The expansion for the susceptibility is obtained in the form

$$\chi = \frac{g^2 \beta^2 \tilde{S}}{3kT} \sum_{n=0}^{\infty} \frac{a_n}{(kT)^n},$$

where $\tilde{S} = n_A \tilde{S}_A + n_B \tilde{S}_B$. The coefficients a_n are given up to $n = 3$. They are valid for any crystal structure composed of N_A - A and N_B - B atoms.

$N_A + N_B = N$ is the number of lattice sites occupied by magnetic atoms.

J_{AA} , J_{BB} , and J_{AB} are the three kinds of exchange interaction. In the expressions for a_n it holds: $\tilde{S}_i = S_i(S_i + 1)$. $n_A = N_A/N$ and $n_B = N_B/N$ are the concentrations of the two components. The p's and c's are structural parameters of the following meaning: c_{AA} is the number of nearest A neighbors to an A atom, c_{AB} is the number of nearest B neighbors to an A atom, etc. $N_{A^p 3A}$, $N_{A^p 2A, B}$, $N_{B^p 2B, A}$, and $N_{B^p 3B}$ are the numbers of

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On the high temperature susceptibility...

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B108/3209

triangles the sides of which join neighboring lattice sites occupied respectively by: Three A atoms, two A and one B atom, two B and one A atom, three B atoms. The author also obtained the expansion of the inverse susceptibility

$$\chi^{-1} = \frac{3kT}{g^2 \beta^2 S} \sum_{n=0}^{\infty} \frac{b_n}{(kT)^n} \text{ with the coefficients } b_0 = 1, b_1 = -a_1,$$

$b_2 = a_1^2 - a_2^2$, $b_3 = 2a_1a_2 - a_1^3 - a_3$. There are 4 non-Soviet+bloc references.

ASSOCIATION: Institute of Theoretical Physics, A. Mickiewicz University, Poznań

SUBMITTED: October 31, 1960

$$a_1 = \frac{1}{2} \bar{S}^{-1} (n_A c_{AA} \bar{S}_A^2 J_{AA} + n_B c_{BB} \bar{S}_B^2 J_{BB} + 2n_A c_{AB} \bar{S}_A \bar{S}_B J_{AB}),$$

Card 3/4 $a_2 = \frac{1}{2} \bar{S}^{-1} (n_A c_{AA} [4(c_{AA} - 1)] \bar{S}_A - 3) \bar{S}_A^2 J_{AA}^2 + n_B c_{BB} [4(c_{BB} - 1)] \bar{S}_B - 3) \bar{S}_B^2 J_{BB}^2 +$

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On the high temperature susceptibility...

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$$+ 2n_A c_{AB} [2(c_{BA} - 1) \bar{S}_A + 2(c_{AB} - 1) \bar{S}_B - 3] \bar{S}_A \bar{S}_B J_{AB}^2 +$$

$$+ 8n_A c_{AA} c_{AB} \bar{S}_A^2 \bar{S}_B J_{AA} J_{AB} + 8n_A c_{BB} c_{AB} \bar{S}_A \bar{S}_B^2 J_{BB} J_{AB} \},$$

$$a_3 = \text{rhs } \tilde{S}^{-1} \{ n_A [2(5c_{AA}(c_{AA} - 1)^2 - 3c_{AA} - 30p_{AA}) \bar{S}_A^2 - 3(c_{AA}(5c_{AA} - 3) + 10p_{AA}) \bar{S}_A +$$

$$+ 6c_{AA}] \bar{S}_A^2 J_{AA}^2 + n_B [2(5c_{BB}(c_{BB} - 1)^2 - 3c_{BB} - 30p_{BB}) \bar{S}_B^2 - 3(c_{BB}(5c_{BB} - 3) +$$

$$+ 10p_{BB}) \bar{S}_B + 6c_{BB}] \bar{S}_B^2 J_{BB}^2 + n_A c_{AB} [4(5(c_{AB} - 1)(c_{BA} - 1) - 3) \bar{S}_A \bar{S}_B -$$

$$- 3(5c_{BA} - 3) \bar{S}_A - 3(5c_{AB} - 3) \bar{S}_B + 12] \bar{S}_A \bar{S}_B J_{AB}^2 +$$

$$+ 5n_A c_{AA} c_{AB} [4(c_{AA} - 1) \bar{S}_A - 3] \bar{S}_A^2 \bar{S}_B J_{AA}^2 J_{AB} +$$

$$+ 5n_A c_{BB} c_{AB} [4(c_{BB} - 1) \bar{S}_B - 3] \bar{S}_A \bar{S}_B^2 J_{BB}^2 J_{AB} - 5n_A [(6p_{AA,B} + 3c_{AA} c_{AB}) +$$

$$+ 4(2p_{AA,B} - c_{AA} c_{AB} (c_{BA} - 1)) \bar{S}_A] \bar{S}_A^2 \bar{S}_B J_{AA} J_{AB}^2 -$$

$$- 5n_B [(6p_{BB,A} + 3c_{BB} c_{BA}) + 4(2p_{BB,A} - c_{BB} c_{BA} (c_{AB} - 1)) \bar{S}_B] \bar{S}_A \bar{S}_B^2 J_{BB} J_{AB}^2 +$$

$$+ 20n_A c_{AA} c_{BB} c_{AB} \bar{S}_A^2 \bar{S}_B^2 J_{AA} J_{BB} J_{AB} \}.$$

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L 14373-63

EWT(1)/HDS/EEC(6)-2/ES(8)-2

AFFTC/ASD/SSD Pt-4 IJP(C)

ACCESSION NR: AP3001819

P/0045/63/023/005/0601/0611

AUTHOR: Fechner, BogdanTITLE: Paramagnetic susceptibility of ferrimagnetic and antiferrimagnetic systems. I. General part.SOURCE: Acta physica polonica, v. 23, no. 5, 1963, 601-611

TOPIC TAGS: Paramagnetic susceptibility, ferrimagnetic system, antiferromagnetic systems, ferrite: cluster method, spin operator, cyclic transposition, molecular field theory

ABSTRACT: The temperature dependence of the paramagnetic susceptibility for ferrimagnetic and antiferrimagnetic substances is derived by means of the series expansion method in the form given by Rushbrooke and Wood. In the ferromagnetic case various more precise methods taking the short-range order effects into account, such as the cluster method of P. R. Weiss, the constant coupling approximation of Kasteleijn and Van Kranendonk and the series expansion method of Opechowski, Rushbrook and Wood and others have been used. The expression for the susceptibility χ and its inverse χ^{-1} are represented as a power series of the reciprocal

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ACCESSION NR: AP3001819

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absolute temperature. Explicit formulae for the first three leading coefficients are given which hold for any crystal containing two types of magnetic atoms with arbitrary spin; three kinds of exchange interactions are allowed. Table I has columns "Kind of product" and "Average value"; table II, "cluster sum," "configuration", "number of labelled configuration in the crystal". The general formulae derived for the first three leading coefficients in the series expansion of the susceptibility and its inverse in ascending powers of the reciprocal temperature hold for any crystal structure that contains two types of magnetic atoms.

"The author is indebted to Professor S. Szczepiowski for his continuous encouragement and valuable indications during the present work."

Orig. has 2 tables, 1 fig (in 17 parts) and 51 numbered equations.

ASSOCIATION: Instytut Fizyki Teoretycznej Uniwersytetu A. Mickiewicza, Poznan
(Institute of Theoretical Physics of the A. Mickiewicz University)

SUBMITTED: 28Jul62

DATE ACQ: 01Jul63

ENCL: 00

SUB CODE: NS

NO REF Sov: 001

OTHER: 009

Card 2/2

ACCESSION NR: AP4017209

P/0045/64/025/001/0061/0070

AUTHOR: Fechner, Bogdan

TITLE: Paramagnetic susceptibility of ferrimagnetic and antiferrimagnetic systems.

SOURCE: Acta physica polonica, v. 25, no. 1, 1964, 61-70

TOPIC TAGS: paramagnetic susceptibility, ferrimagnetic, antiferrimagnetic, manganese ferrite, exchange interaction coefficient, Neel's formula, molecular field theory, asymptotic approximation, Bethe-Weiss cluster theory, inverse susceptibility

ABSTRACT: The expression for the temperature dependence of the paramagnetic susceptibility derived in the first part of the paper is applied to manganese ferrite and the experimental data are compared. The paper discusses the possibility of evaluating the three phenomenological exchange interaction coefficients, and proves that they may be so chosen as to get a satisfactory agreement between theory and experiment for high temperatures. It also compares

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ACCESSION NR: AP4017209

the expression for susceptibility with formulas resulting from other theories and concludes that: 1) Neel's formula for inverse susceptibility, based on molecular field theory, is an asymptotic approximation valid only in the limit when the exchange interactions become very long-range; otherwise, it is exact only in the first two terms; 2) the expression for susceptibility given by the Bethe-Weiss cluster theory is valid only up to the fourth-power term of its expansion in powers of $1/T$; the expression for inverse susceptibility, only up to the second-power term of the analogous expansion. One section is on "Application to ferrites"; another compares the cluster theory.

"I should like to thank Professor S. Szozeniowski for helpful conversations concerning many topics covered in this paper as well as for critically reading the manuscript. Also some interesting remarks of Professor J. T. Lopuszanski are greatly appreciated. I wish also to thank Mr. M. Glapiak M. Sc. for assistance in performing a number of the computations and Miss A. Lehmann M. Sc. for checking some of the calculations."

Card 2/3

ACCESSION NR: AP4017209

Orig. art. Has: 22 equations plus 6 in an appendix (on two formulas in Smart's original paper in Phys. Rev., 101, 1956).

ASSOCIATION: Katedra Fizyki Teoretycznej Uniwersytetu im. A. Mickiewicza, Poznan (Chair of Theoretical Physics of the Mickiewicz University)

SUBMITTED: 12Jul63

DATE ACQ: 18Mar64

ENCL: 00

SUB CODE: MM

NO REF Sov: 000

OTHER: 010

Card 3/3

FECHNER, Bogdan

Paramagnetic susceptibility of ferrimagnetic and antiferri-
magnetic systems. Pt.2. Acta physica Pol 25 no.1861-70
Ja '64

1. Institute of Theoretical Physics, A. Mickiewicz University, Poznan.

FECHNER, Bogdan, dr

Ferromagnetism. Problemy 21 no.3:135-146 '65.

S/073/62/028/004/003/004
I017/I217

AUTHORS: I.N. Sheyko, and V.G. Fechtenko

TITLE: Study on the partial elasticity of Berilium chloride vapors in mixtures with sodium and potassium chlorides

PERIODICAL: Ukrainskii Khimicheskii zhurnal, v.28, no.4, 1962,
473-483

TEXT: The elasticity of the $BeCl_2$ vapors and the partial elasticity of the systems $BeCl_2-NaCl$ and $BeCl_2-KCl$ are studied. It was found that a linear dependence exists between $lg.p$ and $1/T$. The partial elasticity of $BeCl_2$ for the system $NaCl-BeCl_2$ is higher than that obtained for the system $KCl-BeCl_2$. This is explained by the higher stability of the complex compound K_2BeCl_4 in comparison to Na_2BeCl_4 . The calculated activities and activity coefficient at $400^{\circ}C$ for the systems $NaCl-BeCl_2$ and $KCl-BeCl_2$, show that the activity of $BeCl_2$ in the system $NaCl-BeCl_2$ is higher than its activity in the system $KCl-BeCl_2$.

Card 1/2

S/073/62/028/004/003/004
I017/I217

Study on the partial elasticity...

ASSOCIATION: Institut obchtey y neorganicheskoy khimii AN USSR
(Institute for General and Inorganic Chemistry AS
Ukr SSR)

SUBMITTED: June 16, 1961

Card 2/2

KALINOWSKI, Kazimierz; FECKO, Jerzy

Iodocoulometric method for the macrodetermination of noramidopyrine sodium methanesulfonate (Novalgin). Acta pol. pharm. 20 no.1:53-58 '63.

1. Z Zakladu Chemii Farmaceutycznej Akademii Medycznej w Lodzi
Kierownik: prof. dr K. Kalinowski.
(AMINOPYRINE) (SULFONIC ACIDS) (CHEMISTRY, PHARMACEUTICAL)
(MICROCHEMISTRY) (IODINE)

FECKO, Jerzy

Volumetric determination of sodium noramidopyrine methane-sulfonate (Novalgin) with the aid of barium chloride.
Acta pol. pharm. 20 no.3:225-228 '63.

1. Z Zakladu Chemii Farmaceutycznej Akademii Medycznej w
Lodzi Kierownik: prof. dr K. Kalinowski.
(AMINOPYRINE) (BARIUM) (INDICATORS AND REAGENTS)
(CHEMISTRY, PHARMACEUTICAL)

FECKO, Jerzy

Determination of phenylbutazone chloraminometric and mangano-bromometric methods. Acta Pol. pharm. 21 no.2:155-160 '64.

1. z Zakladu Chemii Farmaceutycznej Akademii Medycznej w Lodzi
(Kierownik: prof. dr. K. Kalinowski).

KALINOWSKI, Kazimierz, prof. dr.; FECKO, Jerzy.

Chloro- and bromo-coumlometric determination of phenylbutazone.
Acta Pol. pharm. 21 no.3:247-251 '64

l. Z Zakladu Chemii Farmaceutycznej Akademii Medycznej w Lodzⁱ
(kierownik: prof. dr. K. Kalinowski).

REISS, Ladislav, inz., prof.; FECKO, Stefan, inz.; KARAFFA, Marian, inz.

Some results of the tests of electromechanical strength
of suspended insulators. Energetika Cz 13 no.12:629-630
D '63.

1. Katedra elektroenergetiky, Slovenska vysoka skola
technicka, Bratislava.

~~FEČE, Daniel, dipl. ek.~~

Economic aspects of electric power production and distribution.
Elektroprivreda 16 no.1:7-29 Ja '63.

1. Clan Redakcionog odbora za Hrvatsku, "Elektroprivreda."

FECZKO, Adalbert

Forming of money accumulations and their utilization for the development of the technical and material base of socialism. Probleme econ 16 no.2:161 F '63.

1. Director, Carbochim, Cluj.

POPOV, A.A., nauchnyy sotrudnik; FED', L.S., nauchnyy sotrudnik

Automatic control of the lighting system in poultry houses. Makh.
sil'.hosp. 13 no.12:25 D '62. (MIRA 16:2)

1. Ukrainskiy nauchno-issledovatel'skiy institut ptitsevodstva.
(Ukraine—Poultry houses and equipment) (Lighting)
(Automatic control)

..., I. V.

FMA, I. V.- "Principal Problems in the Agricultural Techniques of Winter Wheat Under Conditions of the Zaporozh'ye Oblast'." Odessa Agricultural Inst, Odessa, 1955
(Dissertations for Degree of **Candidate of Agricultural Sciences**)

SO: Knizhnaya Letopis' No. 26, June 1955, Moscow

PETER, J.

Deformation of buildings in undermined territories. p. 375.

INZENYRSKE STAVBY. (Ministerstvo stavebnictvi)
Praha, Czechoslovakia Vol. 7, no. 10, Oct. 1959.

Monthly List of East European Accession, (EEAI), LC, Vol. 8, No. 12, Dec. 1959
Uncl.

FEDA, Jaroslav, inz., C.Sc.

Some problems of soil mechanics solved in the German Democratic Republic. Inz stavby 10 no.4:147-150.
Ap '62.

1. Ustav teoreticke a splikovane mechnaiky, Ceskoslovenska akademie ved, Praha.

FEDA, Jaroslav, inz., C.Sc.

Determining the liquid limit of soil by Vasil'ev's cone penetration test. Stav casopis 10 no.10:596-607 '62.

I. Ceskoslovenska akademie ved, Ustav teoreticke a aplikovane mechaniky, Praha.

DEMISOV, N.J. [Denisov, N.Ya.], prof. (Moscow); KAMENOV, B., inz.
[translator]; FEDA, J., inz., C.Sc. [translator]

Some problems in laying foundation on loess subsoil. Inz
stavby 10 no.11:412-415 N '62.

FEDA, Jaroslav, inz., CSc.; KAMENOV, Boris, inz.

Shear strength of granular soils under plane strain
conditions. Stav cas 11 no.6: 397-411 '63.

1. Ustav teoreticke a aplikovane mechaniky, Ceskoslovenska
akademie ved, Praha.

FEDA, Jaroslav, inz., ~~and~~ VYKAMENOV, Boris, inz.

Shear strength of granular soils under axially symmetrical stress. Stav cas 11 no. 78417-429 '63.

1. Ustav teoreticke a aplikovane mechaniky, Ceskoslovenska akademie ved, Praha.

FEDA, J., inz. CSc

International Society of Soil Mechanics and Foundation Engineering. Stav cas 12 no. 199-200 '64.

FEDAK, Dezso

New water-conducting ~~substitution~~ at Zahony. Vasut 14
no.10;32-3 of cover. 0 '64.

FEDAK, Jerzy; RYDZEWSKI, Andrzej

Gabbro from the Sobotka 2a borehole. Kwartalnik geol 6 no.4:
760 '62.

1. Zaklad Zloz Rud Metalu Nielaznych, Instytut Geologiczny,
Warszawa.

FEDAK, Jerzy

POLAND

FEDAK, Jerzy; LINDNER, Maria

Geological Institute (Instytut Geologiczny)

Warsaw, Przegląd Geologiczny, No 6, August 63,
pp 370-71.

"Remarks on Elaboration Principles of Metallogenic
Maps".

ELMIK, Gy.; SANTHA, B.

PERAK, Gy.; SANTHA, B. To what unit should the factory Bureau for standards belong? p. 26.

Vol. 10, no. 7, July 1956

TOPBIZTOSÍTÁS

Budapest, Hungary

See: East European Accession, Vol. 6, No. 5, May 1956

"APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412530007-9

FEDAK, IVAN P.

Fedak, Ivan P.; Varka vysokokachestvennogo stekla
(High Quality Glass). Moscow: Gosudarst. Izdatel'stvo Lit. po Stroitel'nym Materialam. 1952. 21 pp.

MF

APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412530007-9"

SEWERY, J.

"Cooperation between Engineers and Technicians on one side and bookkeepers and Economists on the Other in the Attempt to Reduce Fixed Cost of Production in the Machinery Manufacturing Industry", p. 286, (ZEGUMIEK, Vol. 27, No. 8, Aug. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEL), ED, Vol. 4, No. 5, May 1954, Uncl.

FEDAK, Jerzy

Regional metallogeny and methods of plotting metallogenic
maps. Przegl geol 10 no.1:23-27 Ja '62.

1. Instytut Geologiczny, Warszawa.

FEDAK, Jerzy

Prospects of nickel ore deposits of the basic intrusions of the Sudeten. Przegl geol 11 no.4:189-191 Ap '63.

1. Zaklad Zloz i Rud Metalu Nierdzewnych, Instytut Geologiczny, Warszawa.

L 21136-65 EPA(a)-2/ZNT(m)/ZNP(b)/T/ZHA(d)/ZNP(e)/ZNP(t) ASD(m)-3/AS(mp)-2
WH/JD S/0133/84/000/009/0805/0808
ACCESSION NR: AP4045655

AUTHOR: Oyks, G. N.; Matevosyan, P. A.; Ansheles, I. I.; Fatkullin, O. Kh.;
Selivanov, V. M.; Shurygin, G. D.; Sivkov, S. S.; Fedan, A. T.

TITLE: Results of vacuum casting ball-bearing steel by different methods

SOURCE: Stal', no. 9, 1964, 805-808

TOPIC TAGS: vacuum casting, ball bearing steel, degassing alumina rich brick lining

ABSTRACT: A new method involving vacuum casting by gas circulation was developed by the authors in collaboration with B. S. Petrov, M. N. Kul'kova, Ye. N. Ponomarev, Yu. I. Ponomareva, R. M. Zimina, V. I. Fedorov and K. V. Belyakov. The new production process was compared to the method employed at Krasnyy Oktiabr' Plant comprising vacuum casting in the ladle which was found to be ineffective in the treatment of 20 to 30 ton charges. Therefore, the plant metallurgists tried out degassing of the steel in the jet as well as circulation vacuum casting. The specimens were adequately degassed with the

Card 1/2

L 21136-65
ACCESSION NR: AP4045655

steel giving up gas at a rate of 200 to 300 l/min. Hydrogen contents decreased from 43 to 54%. In the process of vacuum casting steel in the ladle, the specimens displayed greater amounts of oxide and sulfide inclusions than in circulation vacuum casting or vacuum casting during relading. The greatest number of globular inclusion was identified in specimens produced by vacuum casting in the ladle. The appearance of this defect is attributed to the increased contact of lightweight melts with chamotte refractories. The authors give preference to circulation vacuum casting despite globule formation and suggest that the use of alumina-rich brick for the lining of the vacuum chamber through which argon is blown and for the sleeve coil lining would substantially improve this process. However, it still remains to be tested on a mass production scale and with heavy weight melts. Orig. art. has: 3 figures and 2 tables

ASSOCIATION: None

SUBMITTED: 00

NR REF Sov: 003

ENCL: 00

OTHER: 002

SUB CODE: MM

Card 2/2

FEDAN, A. T.

L 45219-65 EHT(m)/EHP(s)/EHA(o)/T/EHP(b)/EWA(d)/EHP(t) MJW/JD
ACCESSION NR: AP5000386 5/0148/65/000/003/0053/0058

AUTHOR: Vinnichenko, Ye. V.; Koiterev, L. B.; Yavovskiy, V. I.; Danilin, V. I.
Gelivanov, V. M.; Fedan, A. T.

TITLE: Experiments with molten slag degassing of steel

37
26
B

SOURCE: IVUZ. Chernaya metallurgiya, no. 3, 1965, 53-58

TOPIC TAGS: degassing, slag, chromium steel

ABSTRACT: Degassing experiments done on four grades of steel: 1Kh13, Kh17,
Kh23Ni18 and Kh23Ni13. A low-viscosity basic synthetic slag was prepared in an elec-
tric furnace and mixed with the steel in an intermediate vessel before teeming.
Melt temperatures, gas content, and slag chemical composition were checked during
the process. It was found that with properly prepared slag and good contact of
slag and metal the original hydrogen content of the metal may be reduced by 20-30%.
Another index of degassing is the hydrogen content of the slag at the start of re-
finement. Several concomitant mechanisms for degassing are induced including the
volatilization of HF. At some distance from the electrode, it is possible that the
reverse process occurs, i.e. the solution of hydrogen in slag; but the dominant pro-

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L 45219-65
ACCESSION NR: AP5008386

There is the desorption of hydrogen, particularly desorption at the electrode. The regular relationship between the absolute lowering of hydrogen content and the gas saturation of steel when the temperature of the refining slag is above 1340°C is shown. Simultaneous investigations of the nitrogen content in the metal showed that while some titanium nitrides do adhere to coarse inclusions in the slag, the use of molten slag for degassing does not reduce the nitrogen content of the steel. "H. M. Kulkova, L. T. Shepel', I. N. Zmina, K. V. Belyakova, A. S. Spirin and A. F. Son'kin participated in the work." Orig. art. has: 4 figures, 2 tables, 5 formulas.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute of Steel and Alloys); Metallurgicheskiy zavod "Krasnyy Oktyabr" (Krasnyy Oktyabr Metallurgical Plant)

SUBMITTED: 16Nov64

ENCL: 00

SUB CODE: NM

NO REF Sovi: 004

OTHER: 003

B3A
Card 2/2

OYKS, G.N.; MATEVOSYAN, P.A.; ANSHELES, I.I.; FATKULLIN, O.Kh.; SELIVANOV, V.M.; SHURYGIN, G.D.; SIVKOV, S.S.; FEDAN, A.T.; Prinimali uchastiye: PETROV, B.S.; KUL'KOVA, M.N.; PONOMAREV, Ye.N.; PONOMAREVA, Yu.I.; ZIMINA, R.M.; FEDOROV, V.I.; BELYAKOVA, K.V.

Results of vacuuming ball-bearing steel by various methods. Stal'
(MIREA 17:10)
24 no.9:805-808 S '64.

FATKULLIN, O.Kh.; CHUKHLOV, V.I.; OYKS, G.N.; AMSHELES, I.I.; SIVKOV, S.S.;
FEDAN, A.T.; FEDOROV, V.I.; DANILIN, V.I.

Deoxidizing ball-bearing steel with vacuum treatment by ferroaluminum.
Metallurg 10 no.12:20-22 D '65. (MIRA 18:12)

1. Zavod "Krasnyy Oktyabr" i Moskovskiy institut stali i splavov.

DRYAKHLOV, A.I. (L'vov); FEDAN, R.G. [Fedan, R.H.] (L'vov)

Automation of a process for establishing and maintaining optimum
operating conditions in turbine drilling of oil wells. Avtomatyka
no.5:54-58 '61. (MIRA 14:10)
(Oil well drilling) (Automatic control)

KHOKHLOV, Ivan Vasil'yevich; zasluzhennyy deyatel' nauki i tekhniki
Komi ASSR; SHERSTENOV, Nikolay Vasil'yevich, inzh.; FEDANOV,
Vladimir Patroevich, inzh., zasluzhennyy deyatel' nauki i
tekhniki Komi ASSR; ZAITSEV, Sergey Ivanovich, inzh.;
SEREBRYANYY, A.G., otv.red.; OKHRIMENKO, V.A., red.izd-va;
SABITOV, A., tekhn.red.

[Mining of Pechora Basin coal deposits] Razrabotka ugol'nykh
mestorozhdenii Pechorskogo basseina. Moskva, Gos.nauchno-tekhn.
izd-vo lit-ry po gornomu delu, 1960. 289 p.

(MIRA 13:12)

(Pechora Basin--Coal mines and mining)

"APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412530007-9

~~FEDAROVICH, P.~~

On the broad steppes. Rab. 1 sial. 30 no.7:12-14 Jl '54. (MLRA 9:4)
(Kustanay Province--Women as farmers)

APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412530007-9"

P/N (G.M.)

USSR
GERMANY

V. Electrolytic polishing of metals. II. Anodic behavior of steels. P. A. Likhachev and V. P. Golenkin. *Naučn. Zapiski Dnepropr. Gosudarstv. Univ.* 43, 119-254 (1951); *Referat. Zhur., Khim.* 1954, No. 3 (1953).—By using the method of polarization curves, the anodic behavior of C steels RP-1 and EI-212 was studied in pure H_3PO_4 (sp. gr. 1.6) in a mixt. of 17% H_3PO_4 plus 83% H_2SO_4 (sp. gr. 1.84), and in a soln. of H_3PO_4 + H_2SO_4 + CrO_3 100 g/l. The polarization curves were obtained by the usual compensation methods, the strength of the current being maintained until a const. potential (V) was established. At small c.d. the anodic dissolu. of Fe was accompanied by evolution of H_2 . On the current-potential curves was a flat area corresponding to limiting current (D) which depended on the compn. of the electrolyte, its concen., and the nature of the anode. For the steel RP-1 in H_3PO_4 , D was in a semi-logarithmic relation to the concen. of the acid. In H_3PO_4 and in $H_3PO_4 + H_2SO_4$ both steels behaved alike. Compared with these steels, C steel had a higher value of D . In the presence of CrO_3 , all the steels had the same value of D which was rather small. Attainment of D was connected with an increase of V to a certain value independent of the concen. of the electrolyte. The changes in V took place at an increasing rate which changed to a jump. **III. Naučn. Zapiski Dnepropr. Gosudarstv. Univ.** 43, 127-330 (1953); *Referat. Zhur., Khim.* 1954, No. 3 (1953).—The anodic film which formed in the course of anodic dissolu. of metals was studied. The results confirmed the theory of microelectrochem. dissolu. of metals. With an arrangement of: horizontal anodes this layer of C₆₀electrolyte/cathode it was shown in principle that it was possible to smooth unevenness of the surface by anodic dissolu. through a layer of a dielec. With Cu-Fe and Cu-Zn micro pairs it was shown that metals different in their phys.-chem. properties dissolved anodically at the same rate at certain definite c.d.s. and a corresponding electrolyte. A study of the temp. of

APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412530007-9"

Fol. 1
the anode and the cathode during electropolishing showed
that when the limiting current was reached, there was an
anode film having a high elec. resistance. The mechanism
of electrode electropolishing was discussed. M. Horsch

FEDASH, G. N.

FEDASH, G. N. - "Study of Physical Properties of Iron Alloys." Min of Higher Education
USSR, Kiev, State U imeni T. G. Shevchenko, Kiev, 1955 (Dissertations For the Degree
of Candidate of Physicomathematical Sciences)

SO: Knizhnaya Letopis' No. 26, June 1955, Moscow

Fedash G. M.

F-6

USSR/Magnetism - Ferrites

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 12025

Author : Kurikekh, D.G., Fedash, G.M.

Inst : Dnepropetrovsk Metallurgical Institute imeni I.V. Stalin

Title : Effect of Concentration of Manganese and the Degree of Cold Plastic Deformation on the Physical Properties of Ferrite.

Orig Pub : Fiz. metallov i metallovedeniye, 1956, 2, No 3, 464-471

Abstract : The authors give the results of the measurements of the magnetic characteristic, electrical resistivity (ρ), and the Hall-Kikoin constant (R_f) as a function of the manganese contents and of the degree of cold plastic deformation of Fe-Mn alloys, containing from 1 to 12% manganese. It is shown that ρ and R_f increase with increasing manganese concentration up to 8% and with increasing

Card 1/2

-APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R000412530007-9
USSR/Magnetism - Ferrites

Abs Jour : Ref Zhur - Fizika, No 5, 1957, 12025

degree of deformation. However, the change in the concentration of the alloy leads to a strong change in these characteristics, while the change in the degree of deformation affects them insignificantly. The influence of the manganese concentration on ρ and R_f is connected with the change of the number of conduction electrons, and the influence of the deformation, is connected with the disturbance to the energy levels of the conduction electrons. The coercive force (H_c) increases with increasing manganese concentration. Upon deformation of alloys containing more than 3% manganese, the H_c curves have a minimum, which is due to the redistribution of the manganese in the solution.

Card 2/2

126-2-12/30

AUTHOR: Fedash, G.M.

TITLE: Studies of the coercive force of cold-deformed and annealed iron alloys. (Issledovaniye koertsitivnoy sily kholodnodeformirovannykh i otozhzhennykh zheleznykh splavov).

PERIODICAL: "Fizika Metallov i Metallovedeniye" (Physics of Metals and Metallurgy), Vol. IV, No. 2, 1957, pp. 257-266 (U.S.S.R.)

ABSTRACT: Results are reported of an experimental investigation of the coercive force of alloys of iron as a function of the concentration of the alloying elements, the degree of cold deformation, and the temperature of annealing respectively. It is shown that for cold plastic deformation and annealing the changes in coercive force have a different character in alloys containing elements which raise the A_3 point, and alloys containing elements which lower the A_3 point. Diffusion processes tending to separate the components have been shown to take place as a result of the deformation and incomplete annealing. Figs. 1 show the coercive force as a function of the concentration of the alloying elements. The basic material used in the preparation of the alloys was of the following composition: 99.65% Fe, 0.03% Si, 0.04% Mn, 0.12% Ni, 0.037% C, 0.02% C, 0.02% P, 0.016% S and 0.077% Cu. As can be seen from Figs. 1, the coercive force H_c increases

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Studies of the coercive force of cold-deformed and
annealed iron alloys. (Cont.) 126-2-12/30

with concentration not only for carbon steels, which are two-phase systems of ferrite and cementite, but also in the case of formation of α -hard homogeneous solid solutions. In the latter case, manganese and nickel are the most effective in increasing H_c of ferrites. Cobalt has practically no effect and silicon slightly lowers its values. Figs. 2 show the effect of cold plastic deformation in alloys of iron with chromium, cobalt, silicon, and carbon. In all cases H_c increases, in roughly the same way, with concentration. The curve rises fairly rapidly, then there is a bend in the curve, and finally the curve rises again at an increased rate. Exceptions of this are found in alloys containing more than 8% of Ni or more than 3% of Mn. Below these percentages the behaviour is the same as for the above group, while above them the curves of H_c vs. deformation fall at first and then rise again. Figs. 3 show the effect of annealing. The curves of H_c versus temperature of annealing fall at first but all have maxima at about 600 C except for the case of Si alloyed specimens. It is concluded that the alloys can be

Card 2/3

Studies of the coercive force of cold-deformed and
annealed iron alloys. (Cont.)

126-2-12/30

divided into the same groups by the nature of the changes
in H with concentration, deformation and annealing,
as well as by the character of the effect of the elements
on the critical point A_z .

Card 3/3 There are 3 figures and 1 table, and 7 references, all of
which are Slavic.

SUBMITTED: June 21, 1956. After revision August 10, 1956.

ASSOCIATION: Dnepropetrovsk Institute of Railway Transportation
Engineers imeni L. M. Kaganovich. (Dnepropetrovskiy
Institut Inzhenerov Zh.D. Transporta imeni L. M.
Kaganovicha).

AVAILABLE:

Fedash, G. M.

81900

18.8100

S/126/60/010/01/001/019

E111/E335

AUTHORS: Fedash, G.M. and Surovova, V.I.

TITLE: Investigation of Thermo-e.m.f. Produced in a Circuit
of Deformed and Undeformed Homogeneous Metals

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol.10,
No.1, pp 20 - 23

TEXT: The authors chose zinc, which has a hexagonal lattice, for this investigation to find the influence of crystallographic-axis orientation and grain size on the behaviour of thermo e.m.f. in deformation and annealing of metals with a non-cubic lattice. V-shaped single crystals 180 mm long and 4 mm in diameter were grown by the Bridgman method. The angle between the base plane and the axis of the crystal in each of the shoulders was directly measured after cleavage of the single crystal along the (0001) base plane. One shoulder in the middle part was deformed by pressure and the specimen was connected to a galvanometer. One junction (boundary of deformed and undeformed parts of specimen) was heated while the second, together with the copper connectors and leads, was immersed

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81900

S/126/60/010/01/001/019
E111/E335Investigation of Thermo-e.m.f. Produced in a Circuit of
Deformed and Undefomed Homogeneous Metals

in running water. Fig. 1a shows thermo-e.m.f. as functions of temperature for deformations of 25, 40, 52 and 70%; Fig. 2b as a function of deformation for a constant temperature difference. During deformation the base plane rotated: Fig. 2 shows for 40% deformation thermo-e.m.f. as functions of temperature for various base-plane orientations. Fig. 3 shows the temperature dependence of thermo-e.m.f. for the single crystal (Curve 1) and for polycrystalline specimens of different grain sizes (deformation 62%). The work showed that the thermo-e.m.f. depends both on deformation and initial grain size and, for single crystals, also on the mutual orientation of base planes in the deformed and undefomed parts. Deformation of single crystals gives a positive thermo-e.m.f., that of polycrystalline specimens a negative one. A junction of two single crystals with different base plane orientations showed no decrease in thermo-e.m.f. on repeated heating. With different grain sizes in contact a thermo-e.m.f. is produced.

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Card 2/3

81900

S/126/60/010/01/001/019
E111/E335

Investigation of Thermo-e.m.f. Produced in a Circuit of
Deformed and Undefomed Homogeneous Metals

There are 3 figures and 4 Soviet references.

ASSOCIATION: Dnepropetrovskiy institut inzhenerov
zheleznodorozhnogo transporta (Dnepropetrovsk
Railway Engineers Institute)

SUBMITTED: January 22, 1959, initially.
January 22, 1960, after revision.

Card 3/3

WT

ACCESSION NR: AR4027941

S/0137/64/000/002/1033/1033

SOURCE: RZh. Metallurgiya, Abs. 21187

AUTHOR: Kurilekh, L. P.; Fedash, G. M.

TITLE: Effect of the concentration of alloying elements on the Hall-Kikoin constant
in iron alloys

CITED SOURCE: Nauchn. zap. Dneptropetr. un-t, v. 61, 1963, 3-7

TOPIC TAGS: Hall-Kikoin constant, iron alloy conductivity, Hall electromotive
force, emf

TRANSLATION: The Hall emf, the induction of the samples and the electrical resistivity of the alloys Fe-Ni (up to 14.86 at. % Ni), Fe-Mn (up to 12.3 at. % Mn), Fe-Si (up to 10.755 at. % Si), Fe-Cr (up to 8.5 at. % Cr), and Fe-Co (up to 6.14 at. % Co) annealed for 8 hr at 1100° were measured as a function of the composition of the alloys at room temperature. The Hall-Kikoin constant and the resistivity rise with the concentration of the alloying elements, but the magnitude of the magnetic saturation in the region of homogeneous solid solutions decreases with increasing concentration of the admixtures, with the exception of Co, which raises the magnetic

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saturation slightly. The results obtained lead the authors to the hypothetical conclusion that the rise in the Hall-Kikoin constant is due to a change in the number of conduction electrons. L. Kucherenko

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24.7600

AUTHORS: Fedash, G.M., Surovova, V.I.
TITLE: Influence of Ni and Si on the physical properties
of α -iron
PERIODICAL: Fizika metallov i metallovedeniye, v.15, no.1, 1963,
148-150

TEXT: The physical properties of Fe-Ni and Fe-Si alloys containing respectively up to 12 at.% Ni and 10.8 at.% Si are investigated. With increasing concentration of alloying elements, the Hall emf increases and, for equal concentrations, the increase is more rapid for Si than for Ni; the effect on the electric resistance is similar. Under the given test conditions, the increase in the Hall emf cannot be due to the change in magnetization and the ferromagnetic constant since the magnetization remains almost constant for nickel alloys and decreases for silicon alloys. Therefore, the increase in the Hall emf can be due only to the ordinary Hall constant, which is inversely proportional to the concentration of conductivity electrons. This is in agreement with earlier results. It

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follows therefrom that silicon and nickel reduce the electron density of the ferrite, whereby silicon has a greater effect than nickel. Thermo emf investigations showed that silicon increases the thermo emf more than nickel, whereby the current in all the specimens was in the direction from the alloy to the pure metal. Earlier published results on the dependence of the hardness on the composition of the alloys for the same specimens yielded curves similar to the thermo emf curves. This indicates that hardening caused by the formation of solid solutions is associated with changes in the interatomic interaction, which brings about a drop in the concentration of conductivity electrons. In the case of Fe-Ni alloys, the range of uniformity of the α -solid solution is limited by the appearance of the γ -phase. A strict analogy between the changes of the physical characteristics and hardness was not observed for these alloys; whilst the Hall emf changes slightly, the hardness and the thermo emf increase sharply. This is attributed to the fact that in distinction to silicon, nickel reduces the grain size, bringing about an increase in hardness; a change in the grain size can also appreciably affect the

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thermo emf. There are 3 figures.

ASSOCIATION: Dnepropetrovskiy institut inzhenerov zheleznodorozhного
transporta . (Dnepropetrovsk Institute of Railway
Transportation)

SUBMITTED: March 19, 1962 (initially)
June 25, 1962 (after revision)

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AUTHORS: Usatenko, Yu. I., Fedash, N. P. SOV/32-24-10-3/70

TITLE: The Decomposition of Casting and Martin Cinders Which Are Difficult to Dissolve According to the Sinter Method (Razlozheniye trudnorastvorimykh liteynykh i martenovskikh shlakov metodom spekaniya)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 10, pp 1180-1181 (USSR)

ABSTRACT: It has been found (Refs 1, 5) that only sintered and not melted masses dissolve quickly in acids. In the case of sintering a minimum of flux should be used, because in adding flux components which are difficult to dissolve are being added (Ref 5). In the present paper the results of the investigations mentioned in the title are given. The composition of the cinder is given in tables. It is mentioned that cinders with a greater content of silicic acid and aluminum oxide are more difficult to sinter and to dissolve in the acid. The presence of manganese and chromium in the cinders improves their sintering and the dissolution in the acid. Cinders with a high content of silicic acid and aluminum oxide must be heated to 1000 - 1100° for 10 - 15

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minutes. In the case of manganese- and chromium cinders a heating up to 900 - 1000° for 5 - 10 minutes is sufficient. A table of results of the analysis of the cinders mentioned in the title is given as well as the results of a common melting. The decomposition of these cinders was carried out by sintering in platinum crucibles and using a small quantity of sodium carbonate. There are 2 tables and 5 references, 5 of which are Soviet.

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FEDASH, N. P., Cand. Chem. Sci. (diss) "Decomposition of Nearly Insoluble Cast and Open-Hearth Slags by the Method of Sintering and Determination of Calcium Content," Kishinev, 1961, 14 pp (Kishinev State Univ.) 200 copies (KL Supp 12-61, 257).